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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/606,256

06/24/2003

Leo Zhaoqing Liu

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06/05/2006

EXAMINER

MCCLENDON, SANZA L

DANN, DORFMAN, HERRELL & SKILLMAN
1601 MARKET STREET
SUITE 2400
PHILADELPHIA, PA 19103-2307

ART UNIT

PAPER NUMBER

1711

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/606,256

Applicant(s)

LIU ET AL.

Examiner

Sanza L. McClendon

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1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-12 and 14-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-12 and 14-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/05.

- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. 5/23/06
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Response to Amendment

1. In response to the Amendment received on October 13, 2005, the examiner has carefully considered the amendments. The examiner acknowledges the cancellation of claims 9 and 13. The claim rejection under 35 U.S.C. § 112, 2nd paragraph for claims 2-5 and 9-13 have been overcome by the remarks, stating that the molecular weight of the claims is intended to be the Mw, and has hereby been withdrawn for consideration.

Response to Arguments

2. Applicant's arguments with respect to claims 10-12 and 14-16 have been considered but are moot in view of the new ground(s) of rejection.

3. In response to applicant's request for a new office action because the examiner inadvertently did not consider the IDS documents is granted. Upon consideration of the IDS and documents submitted therewith, the indication of allowable subject matter for claims 1-8 is rescinded and a new rejection will applied to said claims—see below.

Claim Rejections - 35 USC § 102/35 USC § 103

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the

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differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-8 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Burgum et al (5,273,767).

Burgum et al teaches rapidly hydrating gums by exposing gums, such as xanthan and/or gaur gum to ionizing radiation, such as electron beam radiation. The examiner is aware that the instant claims are a method of depolymerizing the polysaccharides found in claim 1 by irradiation, however Burgum et al, while not expressly teaching depolymerization, teaches the instant method of irradiation by electron beams. Burgum et al teaches irradiating with electron beam sources emitting around 12 Mev. The amount of radiation is between 0.1 to about 4.5 Mrad. Since the method taught by Burgum et al appears to be the same method as disclosed the examiner deems that the method of Burgum et al inherently will depolymerize the disclosed polysaccharides to a lower molecular weight. The examiner is interpreting the limitation "pre-selected molecular weight" to mean a lower molecular weight than the un-irradiated polysaccharide used in the method since there is no metes and bounds for the term pre-selected. Thus claims 2-5 are deemed inherent to the method as described by Burgum et al in the absence of evidence to the contrary and/or unexpected results.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this

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title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 10-12 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horton in view of Magallanes et al (6,884,884).

Horton teaches prepackaged crosslinked polymers capable upon hydration for use usage as a fracturing fluid. Said mixture includes a polysaccharide, a crosslinking agent and a pH-adjusting agent to facilitate the crosslinking reaction. Said mix is hydrated while being pumped and reaches maximum viscosity in the formation, such as an oil well. It is taught that the gelling composition is a solvatable polysaccharide having a molecular weight of at least about 100,000 and include those polysaccharides found in column 3, lines 55 to column 4, lines 5. Said crosslinking agents contain polyvalent metal ions and is most preferably zirconium acetal acetate. This anticipates at least one crosslinking agent in claim 11. Horton teaches propping agents, such as sand bauxite and other particulate materials can be added to the dry mixture. Said dry mix is added to an aqueous stream as it is pumped into the well, where rapid hydration is facilitated by the turbulence of the material in the bore well. Per example 13, Horton teaches hydration takes place within less than 30 seconds.

Horton does not expressly teach a galactomannan having polydispersity of below 3.0. However oil well fracturing agents using galactomannan having a polydispersity from 1-8 are known, such as found in Magallanes et al. Magallanes et al teaches methods of depolymerizing galactomannan and derivatives thereof and uses of such compounds. Magallanes et al teaches said depolymerized compounds make unexpectedly better fluids for treating and/or making subterranean fractures, such as by increasing the conductivity of liquids and materials through the use of a proppant pack—see column 6, lines 58-62. Per table 2, Magallanes et al teaches a sample 293H that has a polydispersity of 2.97.

Horton and Magallanes et al are analogous are because they are from the same field of endeavor that is the art of fracturing compositions.

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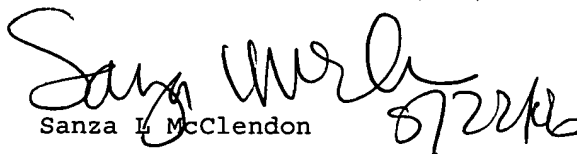
Therefore, it would have been obvious for an artisan of ordinary skill in the art to modify the invention of Horton with the depolymerized galactomannan of Magallanes et al. The motivation would have been a reasonable expectation of successfully obtaining the advantages of the fracturing composition as taught by Magallanes et al--see column 6, line 58-62.

Conclusion

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanza L. McClendon whose telephone number is (571) 272-1074. The examiner can normally be reached on Monday through Friday 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sanza L. McClendon
Examiner
Art Unit 1711

SMc